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REMARKS

Applicant acknowledges, with appreciation, the allowance of claims 6-8, 26, 28, 29, and 34-36, and the indication that claims 14-16, 40, 41, 46-48, and 52-54 contain allowable subject matter. Claims 1-3, 5-12, 15-18, 22-31, 33-41, 43, 44, 46-50 and 52-55 are now pending, with claims 1, 5-8, and 10 being the independent claims. Claim 10 has been amended to incorporate the indicated-as-allowable subject matter of claim 14. The dependency of claims 15, 16, 46, and 52 has been changed from claim 14 to claim 10. Claims 54 and 55 have been amended for clarification only to correct obvious typographical errors. Claim 14 has been canceled. It is respectfully submitted that no new matter has been added.

The Patent Office rejected claims 1, 2, 9, 10, 12, 17-21, 30, 32, 37-39, 43, 44, 49, 50, and 55 under 35 U.S.C. 103(a) as being unpatentable over Ling, U.S. Patent No. 6,377,607, in view of Mueller, U.S. Patent No. 5,379,324, Kim, U.S. Patent No. 6,067,333, and Narvinger, U.S. Patent No. 6,381,229.

Ling is directed to demodulation of turbo-encoded signals via pilot assisted coherent demodulation. A spread-spectrum signal may have been spread using a pseudo noise sequence or a Walsh function. In Fig. 3 of Ling, a PN spreader 30 is used for spreading the signal to be transmitted. Fig. 4 of Ling shows an embodiment of demodulating and despreading the signal for C/I estimation and LLR computation, as shown in Fig. 5. Block 100 of Fig. 5 provides a general estimate SIR. The Patent Office emphasizes Fig. 6 which shows a C/I and noise estimation circuit wherein a despread signal generated by despreader 122 is applied to a squaring and summing circuit 126 as well as to a decoder 124 deriving a pilot channel signal which is applied to averaging filter 128. An estimate of the energy of the filtered pilot channel p is computed via calculation circuit 138 squaring the complex amplitude. After scaling via multiplier 134, an accurate estimate is formed (received energy less noise and interference components). This accurate estimate is subtracted from the estimate provided by circuit 126 so as to yield, at an output of subtractor 132, a measurement of the interference energy associated with the component.

Ling does disclose details of a variance estimate calculation, as noted by the Patent Office.

Mueller has been cited by the Patent Office for closing this gap. According to Mueller, a variance of values of at least portions of a received signal can be calculated. Further, an error

signal is generated responsive to differences between the sampled signal values of the received signal, and corresponding quantized values of the received signal portion. A variance of this error signal is calculated. The gain characteristics of the communication channel are calculated based on these variances. The details of this teaching are further illustrated in Figs. 2, 3 and described, e.g., on column 9, line 6 to column 11, line 4 of Mueller.

The variance of the sampled signal and of the error signal are generated using equations listed at column 10, line 10 and line 35 of Mueller. E denotes the expected value of a signal (column 10, line 17) and thus is not to be set equal to a summing sign.

Further, prior art Mueller does not appear to use the term "variance estimate". The variance is, in Mueller, directly calculated.

There is no motivation for one of ordinary skill in the art to combine Ling and Mueller. Further, such a combination does not lead to the claimed calculating of a variance estimate.

Furthermore, neither Mueller nor Ling do show a step of generating a despread sample signal by averaging over a predetermined code period over which the plurality of spreading codes are orthogonal.

With regard to the latter feature, the Patent Office cites Kim, US 6,067,333. In the CDMA system of Kim, channel parameter evaluation values 209, 210 may be obtained by averaging the quadrature signals for certain chip periods. According to column 4, lines 1 to 3 of Kim, the chip periods sample is used on the assumption that channel parameters are kept constant for a period of a symbol to be detected.

The further feature of claim 1 of the present patent regarding a plurality of spreading codes appears to be a rather general feature which the Patent Office considers to be taught by Narvinger which generally discloses a channel estimation during reception by using pilot symbols providing the energy for the channel estimation. Column 9, lines 19 to 24 of Narvinger refer to different spreading factors.

Again, there is no motivation to combine any of the prior art documents. The Patent Office rejections of claims 1, 2, 9, 10, 12, 17, 18, 21, 30, 32, 37-39, 43, 44, 49, 50, and 55 is a case of impermissible hindsight reconstruction.

Applicant respectfully submits that claims 1, 2, 9, 10, 12, 17, 18, 21, 30, 32, 37-39, 43, 44, 49, 50, and 55 are in condition for allowance.

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The Patent Office rejected claims 3, 11, and 31 under 35 U.S.C. 103(a) as being unpatentable over Ling, U.S. Patent No. 6,377,607, in view of Mueller, U.S. Patent No. 5,379,324, Kim, U.S. Patent No. 6,067,333, Narvinger, U.S. Patent No. 6,381,229, and Blanc, U.S. Patent No. 6,661,777.

Claims 3, 11, and 31 are allowable for the reasons claims 1, 2, 9, 10, 12, 17, 18, 21, 30, 32, 37-39, 43, 44, 49, 50, and 55 are allowable.

The Patent Office rejected claims 5, 22, and 33 under 35 U.S.C. 103(a) as being unpatentable over Ling, U.S. Patent No. 6,377,607, in view of Mueller, U.S. Patent No. 5,379,324, Kim, U.S. Patent No. 6,067,333, Narvinger, U.S. Patent No. 6,381,229, and applicant's Background of the Invention (BOI).

As to the further independent claim 5, the prior art combination includes Ling, Mueller, Kim, Narvinger, and BOI. The BOI basically is referring to "Fundamentals of Statistical Signal Processing...", a book of S. Kay. In addition, Zvonar is cited. Claims 5, 22, and 33 are allowable for the reasons claims 1, 2, 9, 10, 12, 17-21, 30, 32, 37-39, 43, 44, 49, 50, and 55 are allowable.

The Patent Office rejected claim 23 under 35 U.S.C. 103(a) as being unpatentable over Ling, U.S. Patent No. 6,377,607, in view of Mueller, U.S. Patent No. 5,379,324, Kim, U.S. Patent No. 6,067,333, Narvinger, U.S. Patent No. 6,381,229, Blanc, U.S. Patent No. 6,661,777, and applicant's Background of the Invention (BOI).

Claim 23 is allowable for the reasons claims 1, 2, 9, 10, 12, 17-21, 30, 32, 37-39, 43, 44, 49, 50, and 55 are allowable.

The Patent Office is respectfully requested to reconsider and remove the rejections of the claims 1-3, 5, 9, 22, 23, 24, 25, 27, 30, 31, and 33 under 35 U.S.C. 103(a) based on Ling, Mueller, Kim, and Narvinger, whether or not in combination with Blanc, Zvonar, and/or the BOI, and to allow all of the pending claims 1-3, 5-12, 15-18, 22-31, 33-41, 43, 44, 46-50 and 52-55 as now presented for examination. An early notification of the allowability of claims 1-3, 5-12, 15-18, 22-31, 33-41, 43, 44, 46-50 and 52-55 is earnestly solicited.

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Respectfully submitted:

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. BOX 1450, Alexandria, VA 22313-1450.

January 17, 2007   _[signature]_
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